

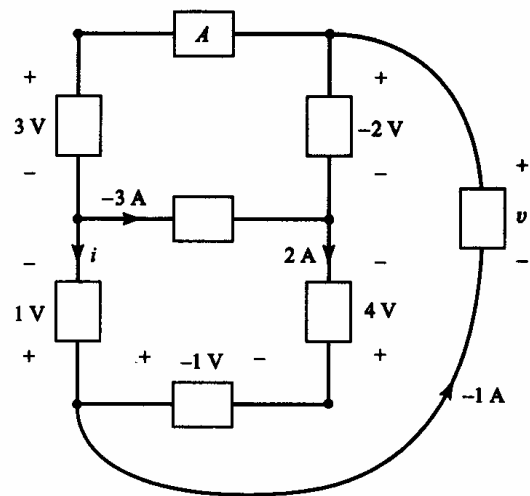
**King Fahd University of Petroleum and Minerals**  
**Electrical Engineering Department**

**EE201 ELECTRIC CIRCUITS**  
**Exam # I**

Name:	I.D#	Sec.#
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**Question No.1**

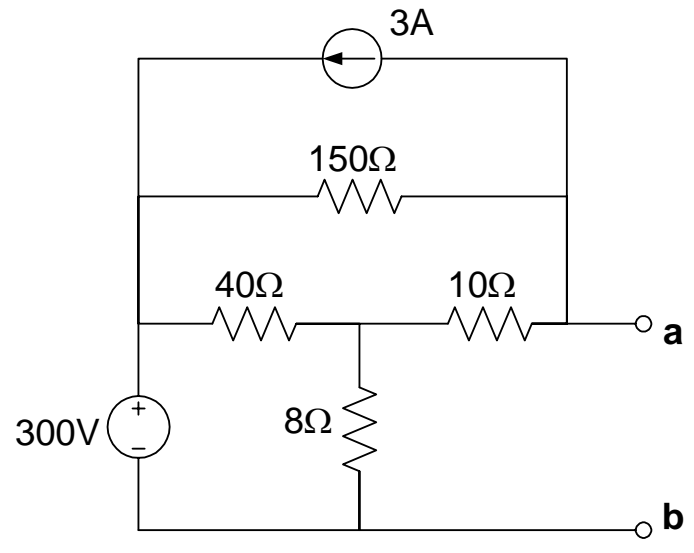
For the circuit shown, find the voltage  $v$ , the current  $i$  and the power associated with element A. Does element A consume or produce power?



**Fig. 1**

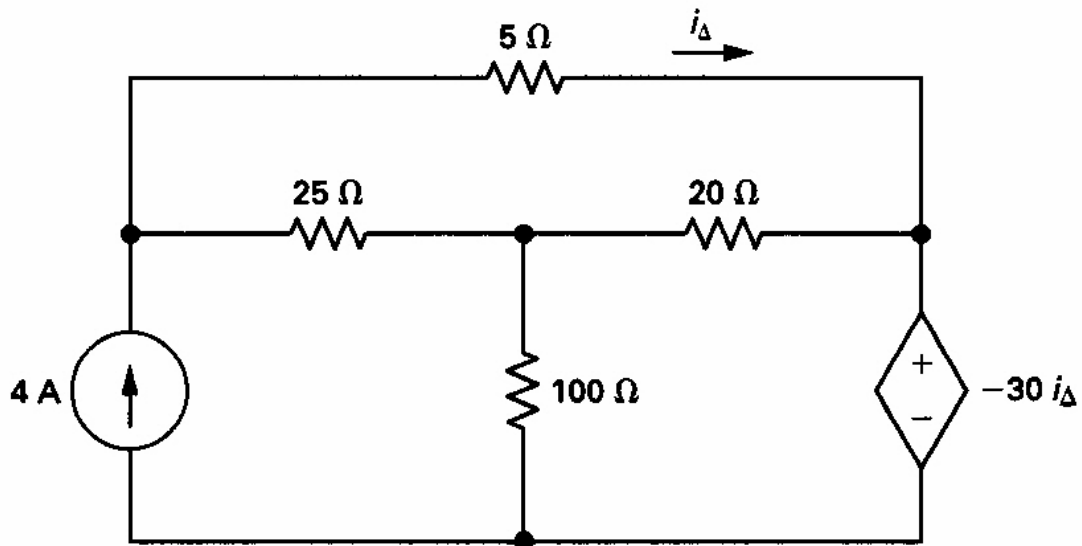
**Question No. 2**

- (a) Use nodal analysis to determine the voltage  $v_a$  in the circuit shown. Hint select node b as your reference node.
- (b) Calculate the power associated with 3A current source.



**Question No. 3**

- (a) Use mesh analysis to determine all mesh currents for the circuit shown.
- (b) Calculate the power associated with each dependent and independent sources. Then, decide if it consumes or delivers power.

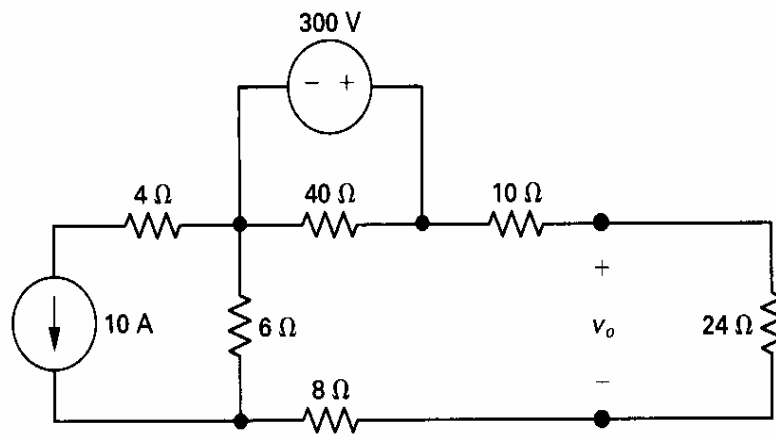


**Question No. 3**

**Part (a)**

25/150

Find the voltage  $v_o$  for the circuit shown in Fig. 3



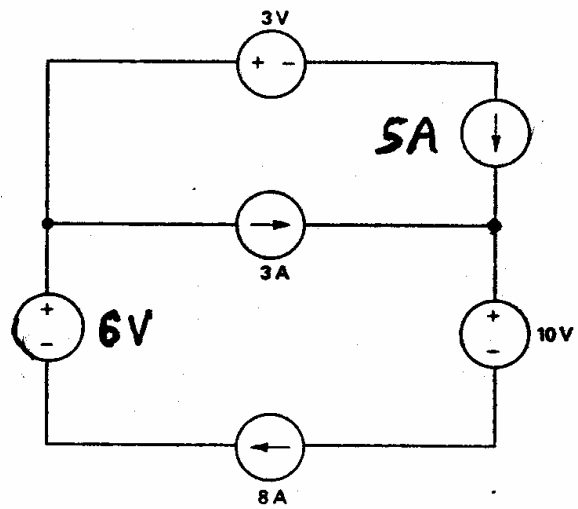
**Fig. 3**

**Question No. 3**

**Part (b)**

25/150

Check if the circuit shown in Fig. 4 is valid by finding that does the total power produced equal the total power consumed?



**Fig. 4**